

A NEW *GENTIANA* (GENTIANACEAE) FROM NORTHERN CALIFORNIA AND SOUTHERN OREGON

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ABSTRACT

Gentiana plurisetosa, a new species from southern Oregon and northern California, is distinguished from other species by its multiciliate plicae associated with erect, glabrous stems.

In studies of highly variable genera, as *Gentiana*, one must guard against the tendency to describe each variation as a new taxon. There are, however, in northern California and southern Oregon several populations of a gentian that are sufficiently distinct to deserve recognition as a new species.

Gentiana plurisetosa C. Mason, sp. nov. (Fig. 1)—TYPE: USA. California, Siskiyou Co: Marble Mountain Primitive area, Half Moon Meadow, 1670 m, 29 Aug 1939, C. C. and S. K. Harris 976 (holotype: ARIZ 29570, isotypes CAS, DS, MONTU, OSC, RM, UC, UTC, WIS, WS, WTU).

Herba perennis glabra. Caule ad 40 cm alti erecti. Folia ovata vel orbicularia, 2–6 cm longa. Flores vulgo multi interdum solitarii, terminales interdum in 1 vel 2 nodis summis, 4.5–5 cm longi, 2–2.5 cm lati. Calyx tubo 14–16 mm longo, lobis lanceolatis 10–14 mm longis. Corolla campanulata caerulea punctis viridibus, lobis 10–15 mm longis ovatis erosis; plicis bifidis cum setis 7–9 capillariibus.

Glabrous perennial herbs with erect stems to 40 cm tall. Leaves ovate to orbiculate, fleshy, 5-veined, entire, 2–6 cm long, 2–3.5 cm wide, frequently longer than the internodes. Flowers 4–5 cm long, with 1–several at the apex or occasionally 1 or 2 nodes down, closely subtended by 2 narrow lanceolate, keeled bracts and frequently by 2 ovate to elliptical leaves. Calyx tube 14–16 mm long, thin membranous and commonly spathaceous, intracalycine membrane prominent; lobes lanceolate, 10–14 mm long. Corolla blue with green dots inside, 4–5 cm long, broadly campanulate; lobes rounded, 10–15 mm long, conspicuously erose. Plicae with 2 primary lobes; each lobe with 3–5 capillary setae 1.5–2 times as long as the corolla lobes. Stamens extrorse; anthers not united. Pistil at anthesis 1.5–2 cm long on a stipe 5–15 mm long.

Representative specimens. CA. Humboldt County: Trinity Sum-

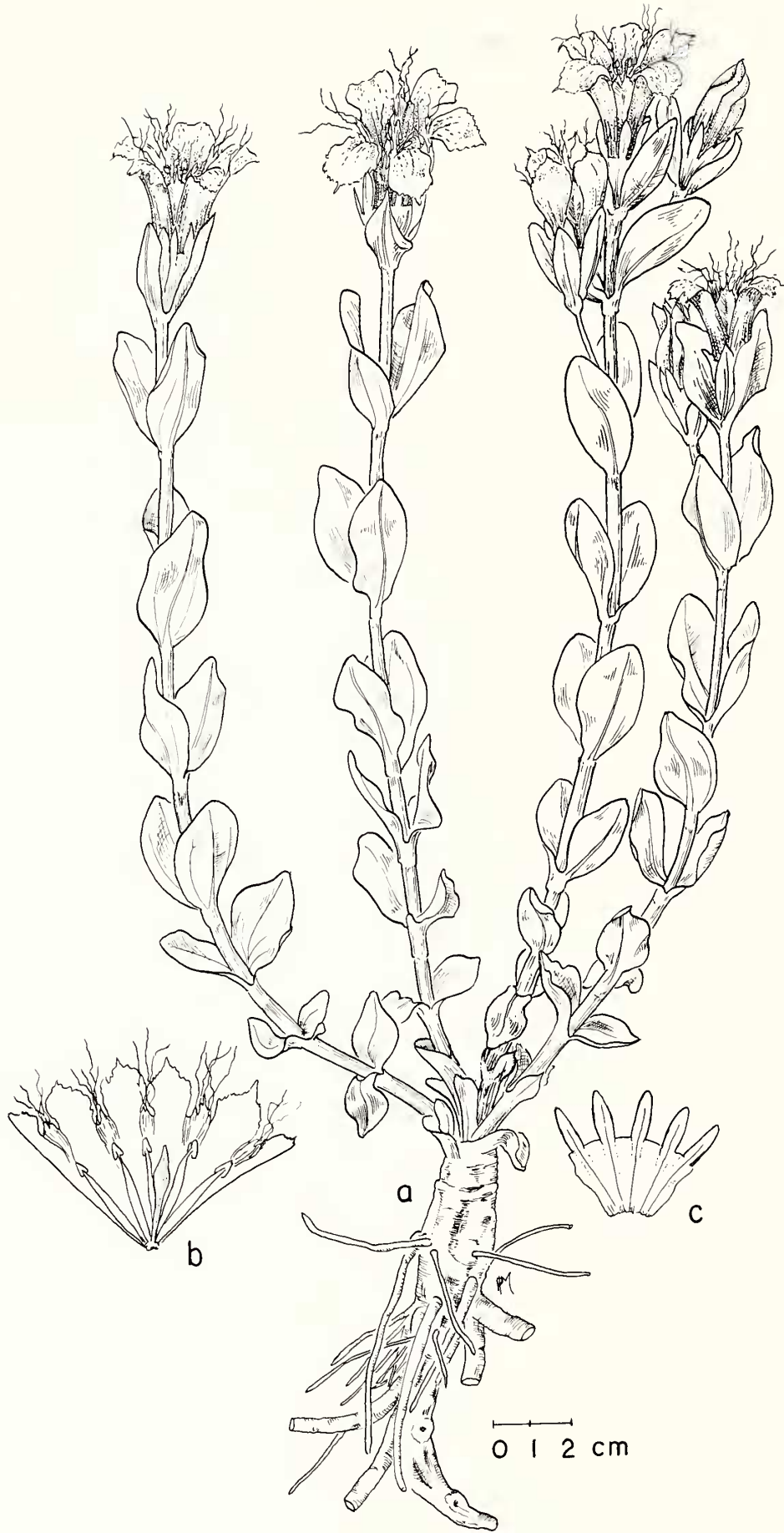


FIG. 1. *Gentiana plurisetosa*. a, plant; b, open corolla; c, open calyx. Drawn from Mason 1789 (ARIZ).

mit, *Tracy 5274* (JEPS, UC); *Kildale 1194* (DS); *Jotter 247* (CAS); N of Trinity Mts, *Esplin 20* (CAS). Siskiyou County: Log Lake, Shackelford Creek, *Butler 419* (JEPS, DS); *Butler 1709* (JEPS, RM); English Lake, *Kildale 6508* (DS); Western Salmon Mts., forest road crossing of Oregon Creek, *Niehaus 935* (ARIZ, CAS, JEPS, RSA, US). OR. Josephine County: Bigelow Lakes, *Greenleaf 1379* (OSC); Upper Bigelow Lake, *Baker and Ruhle 665* (ID, WTU); *Mason 1790* (ARIZ); *Applegate 11467* (DS); Lower Bigelow Lake, *Baker and Ruhle 603* (ID); *Mason 1789* (ARIZ); Bog Cave Lake, *Peck 8302* (OSC); Grayback Mountain, 1979, *Mansfield s.n.* (OSC); East side Grayback Mountain, O'Brien Creek, *Greenleaf 1373* (OSC).

Through interpretations that expanded the specific limits of *G. setigera* A. Gray and *G. bisetataea* Howell, *G. plurisetosa* has been overlooked as a distinct species. Gray (1876) in his characterization of *G. setigera* referred to the stems as ascending and described the plicae with "2-3 thin capillary setae which nearly equal the (corolla) lobes." His description includes "4 flowers at the apex," but the type specimen (GH) is immature and destroyed by insects so the number of flowers is difficult to determine. In later publications (Gray 1880, 1886) he modified the descriptions to indicate a single terminal flower. Howell (1901) did not recognize *G. setigera* but described *G. bisetataea* as having decumbent stems, a solitary flower, and "appendages in the sinuses 2 setae from a rather broad base".

In more recent floristic literature Jepson (1925, 1939) and Munz (1959) recognized *G. setigera*. They acknowledged the ascending stems of *G. setigera*, but specified 1 to several flowers and 2 to several setae on the plicae. Abrams (1951) cited *G. setigera* with "2-8 capillary bristles about equalling the corolla lobes" and *G. bisetataea* with "two capillary bristles about half the length of the corolla lobes." Both species are considered to have erect or ascending stems. Peck (1941) accepted *G. setigera* and considered *G. bisetataea* a synonym. The plicae are described as having "several long fine setae," and the stems are decumbent with one terminal or 1-3 axillary flowers. In the second edition (Peck 1961) he dropped *G. setigera* and accepted *G. bisetataea* with decumbent stems and solitary or 1-3 axillary flowers with 2 to several long fine setae. Chambers and Greenleaf (1989) have determined that *G. bisetataea* should be recognized as a synonym of *G. setigera*.

Gentiana plurisetosa shows similarity to *G. setigera* in the large flowers with long corolla lobes, the capillary plicae, and glabrous stems and leaf margins. The ranges of leaf shapes of the two species overlap. In addition to the multiciliate plicae, it differs by having erect stems usually with several terminal flowers in contrast to the single flowered inflorescence on decumbent stems of *G. setigera*. *Gentiana plurisetosa* lacks the basal rosette of leaves commonly present in *G. setigera*, and it is found at elevations between 1230-1938 m, somewhat higher than the 340-1075 m of *G. setigera*.

Gentiana oregana Englem. ex A. Gray (*G. affinis* Griseb. var *ovata* A. Gray) is similar to *G. plurisetosa* in having large broadly funnelform to campanulate flowers arranged either as a few at the apex or extending down the stem 2 or 3 nodes. In *G. oregana* the plicae are bifurcated without capillary setae and are about $\frac{1}{2}$ the length of the corolla lobes. The stems in the nodal areas are finely puberulent in rows as continuations of the minutely scabrous leaf margins, the upper internodes are about twice the length of the subtending leaf, and both the calyx and corolla lobes are approximately $\frac{1}{2}$ the size of those of *G. plurisetosa*. *Gentiana oregana* is found at elevations ranging from 700–2215 m.

Gentiana calycosa Griseb., a widely distributed and highly variable species, is sometimes confused with *G. plurisetosa*. The two do not occur commonly in the same area, and *G. calycosa* is usually found at higher elevations. It also differs in having a single terminal flower on an ascending stem. The flowers are variable in size, but usually range between 3.5–4 cm long. The corolla lobes are entire or erose with acute or rounded apices, and range from 7–9 mm long. The plicae are 2 lobed, rarely 3 or 4 lobed, and attenuate, but not of capillary setae. They are $\frac{1}{2}$ to $\frac{3}{4}$ the length of the corolla lobes.

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